

## Course Information

Course Title	Course Code Number	Credit Value
Ecological Processes in Tropical Forest	FODE 008-02	3 credits
<b>Prerequisites</b>		
FODE 008-01 Structure and composition of tropical forest ecosystems.		
<b>Corequisites</b>		
None.		

## Contacts

Course Instructor(s)	Contact Details	Office Location	Office Hours
John Innes	<a href="mailto:john.innes@ubc.ca">john.innes@ubc.ca</a>	TBD	TBD
<b>Other Instructional Staff</b>			
TBD			

## Course Description

This course provides a description of the main ecological processes occurring in tropical forests. It is designed to be taken following a course that introduces you to the components of tropical forests (FRST 5xx – Structure and composition of tropical forest ecosystems). It covers both tropical rainforests and tropical seasonal forests. You will learn about the diversity of tropical forests, and the processes that have created this diversity important in understanding their remarkable diversity. You will also learn about the ecological processes found in tropical forests, an understanding of which is essential to judge the potential effects of a management intervention on a forest. You will apply knowledge gained through online presentations, videos, reading assignments, self study and a field trip to assess the potential impacts of an anthropogenic intervention in a tropical forest. Exercises will be used throughout the course to provide a deeper understanding of the complexities and challenges faced by tropical forest managers and stewards in maintaining the ecology of tropical forests.

Various hypotheses have been put forward to explain the diversity found in tropical forests and these are examined in Module 1. We then move on to examine the way that tropical forests function, with Module 2 dealing with ecosystem processes and Module 3 dealing with plant reproduction. The majority of tropical trees are pollinated by animals, and animals (especially vertebrates) play an important part in the subsequent dispersal of seeds. The relationships amongst organisms are further examined in Module 4, which looks into processes such as herbivory, predation, parasitism and facilitation.

A final module (Module 5) looks at case studies from the five tropical forest regions. It is important to be familiar with the tropical forests in one of these regions, but equally important to have some knowledge of the tropical forests in the other regions, as there are substantial differences.

### Target Audience

This course is intended for students working towards a Master's degree in tropical forestry. However, it may be of interest to anyone wishing to learn more about tropical forest ecology. It assumes a certain amount of ecological knowledge, and also that you have completed the prerequisite, but will point you to areas where you can gain further information on particular subjects if you are unfamiliar with them.

Those with a more advanced knowledge of tropical forest ecosystems may find sections of interest to them. Each presentation has been extensively referenced enabling follow-up through further reading.

### Course Prerequisites

A basic knowledge of ecology is needed to take full advantage of the material that is provided in this course. Some knowledge of science (physics, chemistry and biology) is assumed. Online links to further information are provided throughout the course. If the tropical forest environment is new to you, or you have no background in botany or ecology, you should allow time to follow these links.

### Delivery Format

This course is designed to be a fully online MOOC-type course. Course content such as the fundamental concepts will be offered as open educational resources for the Asia-Pacific region. It will follow a format similar to mainstream MOOCs on EdX or Coursera, which typically include presentations, mini-videos, self tests, reflective questions, graded assessments, and moderated discussions on a weekly basis while the course is running.

Students will learn through scheduled instructor-facilitated sessions and discussions and will actively engage with instructors, teaching assistants and their peers to complete all graded assignments to earn the certificate. Your critical thinking skills will be enhanced through the peer assessment of the six sentence argument exercises, when you will be required to grade the work of other students taking the course. Course completion certificates will be issued after students successfully pass the course. Students can access all course materials (except the textbook and readings), presentations, videos, assignments, and tutorials online through the UBC Canvas system.

This course introduces concepts and skills through presentations, videos, assignments and tutorials. A mandatory field course will be introduced in the future. You will be expected to read material to supplement the information provided in the presentations. Most of this is online, but some will require access to a library. We have provided many online links that will enable you to follow up particular topics online and, if you use these, then accessing the textbook material will be less essential. We have also provided a large number of references – partly to support the arguments presented in the course and partly to enable you to follow up particular areas that may be of interest.

One thing that may surprise you is the general lack of graphs and diagrams. This is the result of the academic publishing system, whereby academic publishers charge often considerable amounts to have a figure or graph reproduced. We have been restricted to using open access materials, and these currently are very limited.

## Learning Outcomes

This course introduces concepts and skills through on-line presentations, videos, a field trip, and assignments. You will be introduced to key aspects of the ecology of tropical forests and to essential practical skills such as a basic understanding of how the different elements of tropical forest ecosystems are linked to each other. Communication skills are a fundamental component of this course and you will develop your communication skills through the use of various tools including writing, visual aids and group work.

By the end of this course students should be able to:

- Illustrate the relationships between the processes occurring in tropical forest ecosystems and the physical environment.
- Compare and contrast the ecological processes occurring in the different tropical regions.
- Assess the relevance and importance of different ecological processes in tropical forests.
- Select which species are likely to be keystone species in particular tropical forests.
- Propose how these processes might be affected by human interventions.
- Design ways in which any intervention might minimize the disruption of ecological processes in tropical forests.

## Learning Materials

During this course, we expect that you will access a variety of additional materials. At its simplest, you may want to look up a particular term, phenomenon or species, and wherever possible we have provided links for you to do so. Many of these rely on the online encyclopedia “Wikipedia”. While sometimes incorrect, and continuously being updated, this medium provides a useful source of additional information, particularly in relation to specific organisms.

Associated with each module, you will find a variety of suggested sources of further information. Some of these will be references to textbooks and journal articles, some of which

may require access to a library. Wherever possible, we have used freely available online materials for the required and strongly recommended reading. In addition, we have referenced many of the statements made throughout the course. These references are to journal articles, books and other materials, and you will need access to a good library (such as the University of British Columbia) to read this material.

We also provide links to a range of online video material. In tropical forests, it is often very difficult to see and photograph particular organisms. Trees are large and their leaves may be many meters above the ground. The crowns themselves may be obscured by epiphytes and trees in the lower canopy. The birds and animals in the canopy can often be heard, but many times go unseen. In addition, many are nocturnal. Specialist videographers have made a profession of collecting video of some of the more difficult and rarer aspects of tropical forests, and we have sought out this material for this course. The amount of material is currently quite limited due to copyright restrictions and the interpretation of these. However, material will gradually be added as copyright clearance is obtained.

### Textbooks and other major sources

- Ashton, P. 2014. *On the forests of tropical Asia. Lest the memory fade*. London, UK: Kew Publishing. 670 pp.
- Bermingham, E., Dick, C.W. and Moritz, C. (eds.) 2005. *Tropical Rainforests. Past, present and future*. Chicago, Illinois, USA: University of Chicago Press. 745 pp.
- Brujinzeel, L.A., Scatena, F.N. and Hamilton, L.S. (eds.) 2010. *Tropical montane cloud forests*. Cambridge, UK: Cambridge University Press. 740 pp.
- Bullock, S.H., Mooney, H.A. and Medina, E. (eds.) 1995. *Seasonally dry tropical forests*. Cambridge, UK: Cambridge University Press. 450pp.
- Cardoso da Silva, J.M., Leal, I.R. and Tabarelli, M. (eds.) 2017. *Caatinga. The largest tropical dry forest region in South America*. Cham, Switzerland, Springer Nature. 482 pp.
- Carson, W.P. and Schnitzer, S.A. (eds.) 2008. *Tropical forest community ecology*. Chichester, UK: Wiley-Blackwell. 517 pp.
- Chazdon, R.L. and Whitmore, T.C. (eds.) 2002. *Foundations of tropical forest biology. Classic papers with commentaries*. Chicago, Illinois, USA: University of Chicago Press. 862 pp.
- Corlett, R.T. 2019. *The ecology of tropical East Asia*. 3<sup>rd</sup> edition. Oxford, UK: Oxford University Press. 320 pp.
- \*\*Corlett, R.T. and Primack, R.B. 2011. *Tropical Rain Forests. An ecological and biogeographical comparison*. 2<sup>nd</sup> edition. Chichester, UK: Wiley-Blackwell. 326 pp.
- Dirzo, R., Young, H.S., Mooney, H.A., and Ceballos, G. (eds.) 2011. *Seasonally dry tropical forests. Ecology and conservation*. Washington DC, USA: Island Press. 392 pp.
- Ghazoul, J. 2016. *Dipterocarp biology, ecology, and conservation*. Oxford, UK: Oxford University Press. 307 pp.
- \*Ghazoul, J. and Sheil, D. 2010. *Tropical rain forest ecology, diversity, and conservation*. Oxford, UK: Oxford University Press. 516 pp.
- Hammond, D.S. (ed.) 2005. *Tropical forests of the Guiana Shield. Ancient forests in a modern world*. Wallingford, UK: CABI Publishing. 528 pp.

- Hazebroek, H.P., Adlin, T.Z. and Sinun, W. 2012. *Danum Valley. The Rain Forest*. Kota Kinabalu, Sabah, Malaysia: Natural History Publications (Borneo). 568 pp.
- Kricher, J. 2011. *Tropical ecology*. Princeton, New Jersey, USA: Princeton University Press.
- Lüttge, U. 2008. *Physiological ecology of tropical plants*. 2<sup>nd</sup> edition. Berlin, Germany: Springer-Verlag. 458 pp.
- Malhi, Y. and Phillips, O.L. 2005. *Tropical forests and global atmospheric change*. Oxford, UK: Oxford University Press. 260 pp.
- Osborne, P.L. 2000. *Tropical ecosystems and ecological concepts*. Cambridge, UK: Cambridge University Press. 464 pp.
- Morley, R.J. 2000. *Origin and evolution of tropical rain forests*. Chichester, UK: John Wiley and Sons. 362 pp.
- \*\*Richards, P.W. 1996. *The tropical rain forest*. 2<sup>nd</sup> edition. Cambridge, UK: Cambridge University press. 575 pp.**
- Sánchez-Azofeifa, A., Powers, J.S., Fernandes, G.W. and Quesada, M. (eds.) 2014. *Tropical dry forests in the Americas. Ecology, conservation, and management*. Boca Raton, Florida, USA: CRC Press. 538 pp.
- Sapp, J. 2016. *Coexistence. The ecology and evolution of tropical biodiversity*. Oxford, UK: Oxford University Press. 275 pp.
- \*Whitmore, T.C. 1998. *An introduction to tropical rain forests*. 2<sup>nd</sup> edition. Oxford, UK: Oxford University press. 282 pp.**

\*Required reading

**\*\* Strongly recommended reading**

Please see module readings for a complete list of required and optional readings for each learning module.

## Learning Approach & Activities

You will be using problem-based learning approaches and systems thinking to develop a comprehensive understanding of the ecology of tropical rainforests and tropical seasonal forests. This understanding will be applied to real-world examples in tropical forests, helping you to develop analytical and practical experience for success in your future career. We will expect you to conduct collaborative work with your peers, and learn to integrate theories and concepts from a range of disciplines, including Forestry, Pedology, Hydrology, Climatology, Botany, Zoology, Ecology, Plant Science, and Ecosystem Science. Drawing this material together is a skill in itself, and it is one of the characteristics of Forestry as a discipline. As an ecosystem manager, you will need to not only know what to do in a particular situation but also understand the implications of any specific action on the many different components and processes within the tropical forest ecosystem.

There are many uncertainties still about the ecology of tropical forests. Many processes are imperfectly understood, and many surprises await us. Almost every study undertaken in

tropical forests yields new information, and sometimes long-held theories have to be abandoned in the face of new information. We have tried to point out many of the gaps in information: these provide innumerable potential research opportunities.

## Course Topics

This is a 3-credit course built around five modules. The course is designed to be taken over a single term.

### **Module I: Species diversity**

Topic 1.1: Species diversity in tropical forests

Topic 1.2: Species richness

Topic 1.3: Special situations

### **Module II: Ecosystem processes**

Topic 2.1: Nutrition and productivity

Topic 2.2: Plant form and function

Topic 2.3: Disturbances in tropical forests

Topic 2.4: Pre-industrial humans in tropical Forests

Topic 2.5: Patterns in space and time

### **Module III: Plant reproduction**

Topic 3.1: Flowering, pollination and genetic neighborhoods

Topic 3.2: Seed set and seed dormancy

Topic 3.3: Vegetative reproduction, growth and survival

### **Module IV: Interactions in the forest**

Topic 4.1: Interactions within tropical forests

Topic 4.2: Epiphytes, and ant-mediated interactions

Topic 4.3: Facilitation, and interactions across multiple trophic levels

### **Module V: Case studies**

Topic 5.1: Case studies

5.1.1 Case study - Borneo's Danum Valley

5.1.2 Case Study - Australia's tropical rain forests

5.1.3 Case study - Floristics of Philippine Forests

5.1.4 Case study - The Forests of New Guinea

5.1.5 Case study - The Rain Forests of Peninsular Malaysia

5.1.6 Case study - The kerangas forests of Borneo

5.1.7 Case study - Western Ghats, India

5.1.8 Case study - Kaziranga, India

5.1.9 Case study - Madagascar's Spiny Forest

5.1.10 Case study - The Mascarene Islands

5.1.11 Case study - The Savannahs of Southern and East Africa

5.1.12 Case study - Kibale Forest, Uganda

5.1.13 Case study - The Guineo-Congolian Forests

5.1.14 Case study - The hurricane-dominated forests of the Caribbean

5.1.15 Case study - Brazil's Atlantic Rain Forest

5.1.16 Case Study – Tropical Forests of the Guiana Shield

5.1.17 Case study - Monteverde Cloud Forest, Costa Rica

5.1.18 Case study - Brazil's Caatinga

Topic 5.2: A future for tropical forests?

## Course Schedule

*Note that all deadlines, dates and times are given in Pacific Standard Time (PST). Contact your instructors to discussion any adjustment needed to accommodate your time zone.*

Start Week	Topic	Core Concepts	Learning Activities	Assignment Dues
<b>Module 1: Species diversity</b>				
<b>1</b>	<b>Course Orientation</b>	<ul style="list-style-type: none"> <li>• Course syllabus</li> <li>• Course schedule</li> <li>• Course requirements</li> <li>• Assignment details</li> </ul>	<ul style="list-style-type: none"> <li>• Review course introduction and overview materials.</li> <li>• Familiarize yourself with course platform and tools.</li> <li>• Post self intro on class discussion board.</li> </ul>	Self Introduction due at 23:59 pm on Day 3 of this week (PST).

			<ul style="list-style-type: none"> <li>• Obtain required textbook.</li> <li>• Ask any questions of general requirements for the course on class discussion board.</li> </ul>	
1	<b>Topic 1.1:</b> Species diversity of tropical forests	<ul style="list-style-type: none"> <li>• Species diversity of tropical forests</li> <li>• Measuring species diversity and richness</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 1.1</li> <li>• Potentially participate in online discussion Topic 1.1</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> </ul>	
2	<b>Topic 1.2:</b> Species richness	<ul style="list-style-type: none"> <li>• Explanations for tropical diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 1.2</li> <li>• Potentially participate in online discussion Topic 1.2</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #1</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 1 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 1 due at 23:59 (PST) on Day 7 of this week.</li> </ul>
2	<b>Topic 1.3</b> Special situations	<ul style="list-style-type: none"> <li>• Restricted range species and</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 1.3</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that you have participated in at least one topic online</li> </ul>



		widespread species	<ul style="list-style-type: none"> <li>• Potentially participate in online discussion Topic 1.3</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> </ul>	discussion for Module 1 by 23:59 (PST) on Day 7 of this week.
<b>Module 2: Ecosystem processes</b>				
3	<b>Topic 2.1:</b> Nutrition and productivity	<ul style="list-style-type: none"> <li>• Nutrient cycling</li> <li>• Productivity, biomass and carbon</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 2.1</li> <li>• Potentially participate in online discussion Topic 2.1</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #2</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 2 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 2 due at 23:59 (PST) on Day 7 of this week.</li> </ul>
4	<b>Topic 2.2:</b> Plant form and function	<ul style="list-style-type: none"> <li>• Energy</li> <li>• Water</li> <li>• Leaf senescence and renewal</li> <li>• Functional traits</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 2.2</li> <li>• Potentially participate in online discussion Topic 2.2</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 3 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 3 due at 23:59 (PST) on Day 7 of this week.</li> </ul>

			<p>the presentations if you make any mistakes</p> <ul style="list-style-type: none"> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #3</li> </ul>	
5	<b>Topic 2.3:</b> Disturbance	<ul style="list-style-type: none"> <li>• Forest disturbances</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 2.3</li> <li>• Potentially participate in online discussion Topic 2.3</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #4</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 4 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 4 due at 23:59 (PST) on Day 7 of this week.</li> </ul>
6	<b>Topic 2.4:</b> Humans in tropical forests	<ul style="list-style-type: none"> <li>• Pre-industrial humans in tropical forests</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 2.4</li> <li>• Potentially participate in online discussion Topic 2.4</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> </ul>	
6	<b>Topic 2.5:</b>	<ul style="list-style-type: none"> <li>• Patterns in space and time</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 2.5</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 5 due at</li> </ul>

	Patterns in space and time		<ul style="list-style-type: none"> <li>• Potentially participate in online discussion Topic 2.5</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #5</li> </ul>	<p>23:59 (PST) on Day 5 of this week.</p> <ul style="list-style-type: none"> <li>• Your grades for 2 6SAs from assignment 5 due at 23:59 (PST) on Day 7 of this week.</li> <li>• Ensure that you have participated in at least one topic online discussion for Module 2 by 23:59 (PST) on Day 7 of this week.</li> </ul>
<b>Module 3: Plant reproduction</b>				
7	<b>Topic 3.1:</b> Flowering, pollination and genetic neighbourhoods	<ul style="list-style-type: none"> <li>• Flowering</li> <li>• Genetic neighbourhoods</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 3.1</li> <li>• Potentially participate in online discussion Topic 3.1</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #6</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 6 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 6 due at 23:59 (PST) on Day 7 of this week.</li> </ul>
8	<b>Topic 3.2:</b> Seed set and seed dormancy	<ul style="list-style-type: none"> <li>• Seed set</li> <li>• Seed dormancy and germination</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 3.2</li> <li>• Potentially participate in online discussion Topic 3.2</li> <li>• Go through the presentations</li> </ul>	<ul style="list-style-type: none"> <li>• Mid-term exam</li> </ul>

			<ul style="list-style-type: none"> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the mid-term exam</li> </ul>	
9	<b>Topic 3.3:</b> Vegetative reproduction, growth and survival	<ul style="list-style-type: none"> <li>• Vegetative regeneration</li> <li>• Growth and survival</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 3.3</li> <li>• Potentially participate in online discussion Topic 3.3</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #7</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 7 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 7 due at 23:59 (PST) on Day 7 of this week.</li> <li>• Ensure that you have participated in at least one topic online discussion for Module 3 by 23:59 (PST) on Day 7 of this week.</li> </ul>
<b>Module 4: Interactions in the forest</b>				
10	<b>Topic 4.1:</b> Interactions in the forest	<ul style="list-style-type: none"> <li>• Herbivory</li> <li>• Predation</li> <li>• Parasitism</li> <li>• Competition</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 4.1</li> <li>• Potentially participate in online discussion Topic 4.1</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 8 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 8 due at 23:59 (PST) on Day 7 of this week.</li> </ul>

			<ul style="list-style-type: none"> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #8</li> </ul>	
11	<b>Topic 4.2:</b> Epiphytes and ant-mediated interactions	<ul style="list-style-type: none"> <li>• Epiphytes</li> <li>• Ant-mediated interactions</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 4.2</li> <li>• Potentially participate in online discussion Topic 4.2</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #9</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 9 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 9 due at 23:59 (PST) on Day 7 of this week.</li> </ul>
12	<b>Topic 4.3</b> Mutualism, facilitation, and interactions across multiple trophic levels	<ul style="list-style-type: none"> <li>• Facilitation</li> <li>• Interactions across multiple trophic levels</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 4.3</li> <li>• Potentially participate in online discussion Topic 4.3</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Complete the 6SA exercise #10</li> </ul>	<ul style="list-style-type: none"> <li>• Six-sentence answer assignment 10 due at 23:59 (PST) on Day 5 of this week.</li> <li>• Your grades for 2 6SAs from assignment 10 due at 23:59 (PST) on Day 7 of this week.</li> <li>• Ensure that you have participated in at least one topic online discussion for Module 4 by 23:59 (PST) on Day 7 of this week.</li> </ul>
<b>Module 5: Case studies</b>				
13	<b>Topic 5.1:</b> Case studies	<ul style="list-style-type: none"> <li>• Borneo's Danum Valley</li> </ul>	<ul style="list-style-type: none"> <li>• Go through the presentations for three case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that you have participated in three case study online</li> </ul>

		<ul style="list-style-type: none"> <li>• Australia's tropical rain forests</li> <li>• Floristics of Philippine tropical forests</li> <li>• The forests of New Guinea</li> <li>• The rainforests of Peninsular Malaysia</li> <li>• The Kerangas forests of Borneo</li> <li>• Western Ghats, India</li> <li>• Kaziranga, India</li> <li>• The Spiny Forests of Madagascar</li> <li>• The Mascarene Islands</li> <li>• Savannas of southern and eastern Africa</li> <li>• Kibale Forest, Uganda</li> <li>• The Guineo-Congolian Forest</li> <li>• Hurricane-dominated forests of the Caribbean</li> <li>• Brazil's Atlantic Rain Forest</li> <li>• Tropical Forests of the Guiana Shield</li> <li>• Monteverde Cloud Forest, Costa Rica</li> <li>• Brazil's Caatinga</li> </ul>	<ul style="list-style-type: none"> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> <li>• Participate in online discussions on three case studies</li> <li>• Complete the self reviews for each case study you have chosen</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> </ul>	discussions for Module 5 by 23:59 (PST) on Day 7 of this week.
14	Topic 5.2:	<ul style="list-style-type: none"> <li>• The future of tropical forests</li> </ul>	<ul style="list-style-type: none"> <li>• Complete required readings for Topic 5.2</li> </ul>	

	A future for tropical forests?		<ul style="list-style-type: none"> <li>• Potentially participate in online discussion Topic 5.2</li> <li>• Go through the presentations</li> <li>• Complete self-check quiz, checking back with the presentations if you make any mistakes</li> <li>• Complete the self review</li> </ul>	
15	<b>Course Wrap-up</b>	<ul style="list-style-type: none"> <li>• Key course contents</li> <li>• Course requirements and outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Review key course contents</li> <li>• Review course requirements and expected outcomes for the final exam</li> <li>• Complete the exam</li> <li>• Conclude the course</li> </ul>	<ul style="list-style-type: none"> <li>• Final exam (date and time TBD)</li> </ul>

## Course Certification

This is a course with an option to obtain certification for a 3-credit Master's course.

Assessments to student certification include the following components. Each component must be passed to successfully complete the course to get the course certificate. The passing grade is 60%.

Components	Points/Marks	Weight
Six Sentence Answers (10)	12 each	30%
Six sentence grading (10 x 2)	6 each	20%
Pre-readings and Discussions (7)	10 each	20%
Mid-term Exam	20	10%
Final Exam (online)	20	20%

Final letter grades will be given based on the following grading schema:

Letter Grade	Range
A+	90% - 100%
A	85% - 89%
A-	80% - 84%
B+	76% - 79%
B	72% - 75%
B-	68% - 71%
C+	64% - 67%
C	60% - 63%
F (Fail)	0% - 59%

## Late Assignment Policy

We recognize that learners will have various schedule constraints. That is why for assignments, we will provide a 5-day *grace period* for late submissions where you will not get any point deduction. However, we also do not want to discourage learners who punctually submit their deliverables. That is why those who are able to beat the deadline will have 2 bonus points in that activity. Otherwise, a deduction of 1 point per day will be applied for deliverables submitted after the *grace period*.

## Participation Expectations

Problem-based learning requires that you participate in all course activities and engage in peer-learning. You will be evaluated based on your progress in the course (e.g. whether you can complete the lectures and other associated activities on time) and participation in class and on the discussion board (e.g. post questions on the discussion board, participate in the discussion with other classmates).

## Netiquette Expectations

Netiquette, or internet etiquette, is a set of guidelines for acting appropriately online. We are providing you with the following guidelines to empower you to successfully communicate in our online learning environment.

We encourage you to....

- Be clear when expressing thoughts and information, remember that other users cannot see your facial expressions or hear tone of voice. Thus it is important to be weary of using humor and sarcasm.
- Remember that humans are on the other end of correspondence. Do not say anything that you would not say in person. Before you send something, ask yourself... how would



I interpret this if I received it? Should I send it? Is the content better discussed over the phone, video chat or in person?

- Respect other people's time. Make the subject line of a post specific to your message. Avoid tangents and stick to one subject per posting.
- Don't expect instant responses from peers or professors.
- Be forgiving and supportive of other learners.
- Understand that grammatical and spelling errors will happen and do not judge.
- Be sure to respond to your classmates' comments on your posts, just like you would in a face-to-face conversation.
- Remember everyone is from different cultures and may bring different perspectives. Embrace diversity.
- Provide sincere and constructive comments of praise and feedback
- Respect the fact that everyone has different levels of technical competency and different learning styles
- Before entering a discussion, be sure to observe and review before leaping in to respond; avoid repetition. Also, take some time to consider your response to ensure it is well thought-out.
- Refer to your classmates' posts and comments when you contribute to the discussion to show that you acknowledge their thoughts.
- Do not use capital letters (this means someone is shouting). To emphasize a word, use asterisks in the following manner: \*word\*.
- Include your name at the end of each posting/comment.
- Cite all sources incorporated in posting using APA format and use a direct link when possible.
- Proofread all postings before submitting. Avoid using abbreviations and foul language; and be sure to use proper capitalization.
- Fundamentally, just as with your assignments or participation in other classes, remember that your posts and contributions in our online environment represent YOU. Be the best version of yourself in all ways possible. Go the extra mile to be a great contributor to the online environment.

(Source: Netiquette by Jaimie Hoffman is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.)

## Academic Integrity

UBC is an academic community in which commitment to the principles of truth and academic honesty is essential. The Code of Academic Integrity prohibits students from committing the following acts of academic dishonesty:

1. Cheating: intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.

2. Fabrication: intentional and unauthorized falsification or invention of any information or citation in any academic exercise.
3. Facilitating academic dishonesty: intentionally or knowingly helping or attempting to help another violate any provision of the Academic Code.
4. Plagiarism: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise.

**ANY PLAGIARISM will result in a mark of zero for the assignment/exam.** As a student, you are expected to submit original work and give credit to other people's ideas and writing. Plagiarism includes copying other people's ideas or writing without citing the source. If a quotation is used, it must be identified as a quotation and correctly cited. **Plagiarism is considered a very serious issue and can affect your career.**

Please make sure you know UBC's policies on plagiarism and read tips for avoiding it (see <http://help.library.ubc.ca/planning-your-research/academic-integrity-plagiarism/> ).

For additional guidance on what plagiarism is and how to avoid it, please see:

UBC Calendar: <http://www.calendar.ubc.ca/Vancouver/index.cfm?tree=3,54,111,959>

UBC Learning Commons, Avoiding Plagiarism: <http://learningcommons.ubc.ca/resource-guides/avoiding-plagiarism/>

## Other Course Policies

### Learning Analytics

Learning analytics includes the collection and analysis of data about learners to improve teaching and learning. This course will be using the following learning technologies: Canvas, etc. Many of these tools capture data about your activity and provide information that can be used to improve the quality of teaching and learning. In this course, I plan to use analytics data to:

- View overall class progress
- Track your progress in order to provide you with personalized feedback
- Review statistics on course content being accessed to support improvements in the course
- Track participation in discussion forums
- Assess your participation in the course

### Copyright

All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the Course Instructor(s) or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline.